

The Heterodyne

Newsletter of the West Valley Amateur Radio Association

October Virtual Meeting

***How to Get On 900 MHz
by Dave Brown, WR6Z***

**Wednesday, October 14
Meeting Starts at 7pm
Visitors Are Welcome!**

***Virtual Meeting via Zoom,
See Zoom Instructions on Page 2***

***Due to the coronavirus, there will not
be a meeting at American Red Cross.***

WVARA Repeaters (W6PIY)		
Band	Frequency	PL
6 Meters	52.580- MHz	151.4 Hz
2 Meters	147.39+ MHz	151.4 Hz
1.25 Meters	223.96- MHz	156.7 Hz
0.70 Meter	441.35+ MHz	88.5 Hz
0.23 Meter	1286.2- MHz	100 Hz

Club Net

WVARA's club net is on the W6PIY repeaters each Tuesday at 8:30 pm. All repeaters are linked together during the net. The net script can be found at www.wvara.org/net.html.

At this month's meeting, Dave Brown (WR6Z) will give a virtual presentation on **How to Get On 900 MHz**. The 902-928MHz amateur band poses some interesting obstacles to get on the air



and operate as there are no amateur specific radios commonly available. This makes the band ideal for the ham radio DIY experimenter to get on the air and is not expensive to do so. This presentation will cover the origins of the 900MHz ham band, how to obtain and modify equipment to get on the air and where to operate.

A Bay Area native, Dave Brown was first licensed in 1977 as WD6EBC and later upgraded to the extra class, changing call signs to WR6Z. Being active in the hobby since he was first licensed, he enjoys building projects, working on radio equipment as well as operating portable on HF, VHF and UHF. A graduate from Cal Poly, SLO he has worked in the field of electrical engineering for over 30 years specializing in RF, mixed signal and power management systems. He is an active WVARA member and is currently working in R&D application engineering focused on semiconductor products for mobile platforms at Kinetic Technologies, Inc.

Looking forward to seeing you at our virtual meeting.

Jim, K6EI

WVARA Vice President

Zoom Meeting Specifics

Topic: WVARA Monthly

Time: Oct 14, 2020 07:00 PM Pacific Time (US and Canada)

Join Zoom Meeting:

<https://us02web.zoom.us/j/82509826854?pwd=cURvemF0VEwzTHNlZzMvdk1HTDZVQT09>

Meeting ID: 825 0982 6854

Passcode: 226249

One-tap Mobile:

+16699006833,,82509826854#,,,,,0#,,226249# US (San Jose)

+12532158782,,82509826854#,,,,,0#,,226249# US (Tacoma)

For Dial-in from San Jose area:

+1 669 900 6833

For Dial-in from other areas see:

<https://us02web.zoom.us/j/kdSzPLLbNq>

Zoom Help Center - Joining a Meeting:

<https://support.zoom.us/hc/en-us/articles/201362193-How-Do-I-Join-A-Meeting->

New Members:

***The following new members
joined WVARA recently:***

Pamala Towner, KD6KDF

Steve Pottol, KD6KDM

Scott Kennedy, KN6KHV

Welcome!!!

WSJT-X: A few things I have learned... W6ESL

WSJT-X and the FT-8 mode have allowed this old operator the opportunity to do things which I thought at this low in the solar cycle seemed unattainable: WAS, WAC, DXCC, WPX. What follows are my observations of things that I have picked up and learned along the way. They may help you if you go through the process of setting up your station and start using WSJT-X and FT-8 or FT-4. This isn't a tutorial in setting up.

I upgraded my main Ham computer to windows 10. It is fast enough (3.3 GHz) and has plenty of RAM, but I was plagued with a number of strange things when running WSJT-X and FT-8.

If traffic was light, there seemed to be no problem, but if the band were crowded, then the program would start decoding only the 00/30 or 15/45 cycles. I couldn't figure out why, until I saw a post on the WSJT-X reflector about changing the priority of the running WSJT-X program.

I found instructions on how to do this, followed them, and put the priority from Normal to High. Issue solved.

I also tried following the instructions to make that a permanent setting – that hasn't worked yet. I will likely have to do something in a command line environment – just like running DOS, if you can remember that. That endeavor can wait.

So each time I start WSJT-X, I change the priority to High.

I did not seem to have this issue when running Windows 7. I still have a laptop running that OS, so I learned that you can change priority in Windows 7, or even Windows XP. You can look up the process by a Google search. It involves using the Task Manager program.

All my operating HF equipment is old, 30 years old or more, old. They are all Kenwoods (except for the Drake TR-4 I am still working on). The SSB filters tend to be 2.5 kHz or so in bandwidth. They can hear beyond that range, but transmitting above that leads to attenuation in the transmitted signals.

Once I learned that, I would look for a 'bare' spot in the band below 2.3 kHz, stake it out, and 'hold' that frequency. Those DX stations above the 2.5 kHz would find me when I called them, and I would work them. Their signal strength would be -20 or so, but that is doable signal strength in FT-8.

Then, one night, on 20 meters, I saw a DX station I really wanted, and he was at 2815, or something like that. He was really weak and intermittent.

I thought about it, and instead of staying tuned to 14074 (standard watering hole frequency), I moved the tuned frequency to 14075. Still 20 meters, and the logging function will figure out the correct frequency to 6 decimal points.

The DX station was now at 1815, and there was ample clear space for me to put my signal on. And while the DX stations signal strength had been at something like -24, it was now at -18. So now, if I find a station above my filter bandwidth range, I just retune up 1 kHz. It really helps, and I note that some of the rare folks stay high, or very low. So if you find someone low, go down a kHz, in the same manner as going up.

I don't know how more modern rigs would respond, but it might help there, too.

I also tried FT-4. This mode has a similar messaging setup to FT-8. Instead of 15 second intervals, however, it is 7.5 second interval. The signal is a little wider. The exchanges go faster. There are different watering hole frequencies. I may try it during FD if there are a lot of other folks on that mode.

Timing. WSJT-X modes rely on everyone being close to the same time. Over 2 seconds time difference may lead to not being able to decode the signals.

I use Meinberg network time protocol when I am on a network, and that will set me up so I am generally within .2 seconds or less of most stations on the air. If I leave it running, it may get down to 0.0 time difference for a lot of folks who set their timing each and every time they start WSJT-X. Some folks in remote sections of the world may differ from me by as much as 2 seconds, but they still decode, and can be worked. There are other ntp programs that can be used.

If off network, I use a GPS hockey puck, and a program called GPStime to set the computer's clock. It is a process getting it to work, but worth it. You have to install drivers, determine the comm. Port, and all that type of thing. If you go portable, it could be the only way to be sure that you are timed similarly to the others on the air. I think Bill, AE6JV, used his iphone and linked his computer via Bluetooth or wifi to it, and used the iphone time to set the computer's clock. None of my old computers have Bluetooth readily available, so I rely on the GPS hockey puck. Perhaps Bill can write up how he managed using the iphone.

I set the update interval to 2 minutes, and let it run 10 minutes before I start WSJT-X. Once on the air, I tend to shut the program down, and disconnect the hockey puck, as I have had RF get into the USB line, and that has caused funny issues in the computer. A few more ferrite beads might help, but I haven't tried that yet.

Remember: DX is.... in whatever mode you choose to operate.
CQ DX 11 meters!

Tom W6ESL

Coming Up at November 11 Meeting: Russian Woodpecker Over the Horizon Radar by Keith Snyder, KI6BDR

Hidden deep in a serene forest yet taller than the clouds, standing in surreal beauty is an antenna array like none other on earth, having an aperture area greater than 15 U.S. football fields. One of the great wonders of the world – a top secret Soviet HF radar, so secret that even the name is uncertain, for it had many. It was the Russian Woodpecker. It was the Steel Yard. It was Duga.



The story of this top secret place is one of mystery and intrigue. Now abandoned, a rusting testament to man's cold war hubris, almost all popular accounts on the web are seriously flawed – victims of de-

liberate disinformation. Where did it come from? What did it do? Did it transmit? Did it receive? Was it the first of three, or the third of two?

Keith Snyder, KI6BDR, has been busy reverse engineering to uncover truth before time erases history. Keith shows visible engineering clues that reveal the mission and correct the history of the huge "Duga 3" antenna Array. The Duga 3 is located a few kilometers from the Chernobyl nuclear power plant site. Although it has fallen into disrepair, it stands today due only to a hasty exit forced by radiation from the Chernobyl nuclear accident. The nuclear accident ironically protected the array from dismantlement, a reprieve from all but the ravages of time. The antenna array today attracts tourists who visit Chernobyl. It is one of the 8th Wonders of the World due to its titanic size.

Jim, K6EI
WVARA Vice President

WVARA Net Check-Ins (W6PIY)						
Tuesdays at 8:30 PM						
Call Sign	Name	09/08/20	09/15/20	09/22/20	09/29/20	10/06/20
Total		19	17	16	18	15
AA6RB	Roy	X	X	X		
AF6AE	Bill	X	X	X	X	X
K6EI	Jim			X	X	
K6RZA	Roman				X	
KC6ZKT	Steve	X	X	X	X	X
KC7XE	Stan				X	
KE6MT	Rex					X
KF6EMB	Svend	X	X	X	X	X
KJ6CW	Jim	X				X
KK6HPF	Ross	X	X			X
KK6UYI	Todd	X				
KK6VF	Kevin	NET	NET	NET	NET	NET
KN6KHV	Scott		X	X		
KX6B	Dick	X	X			X
N6BTU	Wayne	X	X	X	X	
N6FYR	Matt		X		X	
N6PWD	Patrick			X		
W6BG	Max	X	X	X	X	X
W6ESL	Tom	X	X		X	X
W6IA	Mark	X	X	X	X	X
W6MNL	Steve	X	X		X	
W6PGC	Pat	X			X	X
W6PK	Phil	X	X	X		
W8RJL	Ron	X	X	X	X	X
WB6JHI	Steve	X		X		
WB6KHP	Dave	X	X	X	X	X
WR3K	Greg			X	X	X
WR6Z	Dave				X	

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The Heterodyne is published monthly by the West Valley Amateur Radio Association and sent to all club members via the web. Please obtain permission from the author to re-publish any article in this publication.

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